

ABSTRACT OF THE DISCLOSURE

A water soluble, biodegradable reverse thermal gelation system comprising a mixture of at least two types of tri-block copolymer components is disclosed. The tri-block copolymer components are made of a hydrophobic biodegradable polyester A-polymer block and a hydrophilic polyethylene glycol B-polymer block. The drug release and gel matrix erosion rates of the biodegradable reverse thermal gelation system may be modulated by various parameters such as the hydrophobic/hydrophilic component contents, polymer block concentrations, molecular weights and gelation temperatures, and weight ratios of the tri-block copolymer components in the mixture.

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